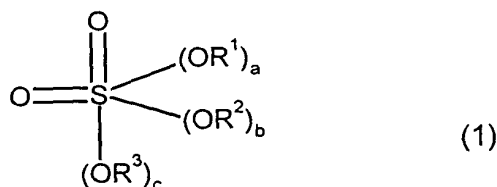


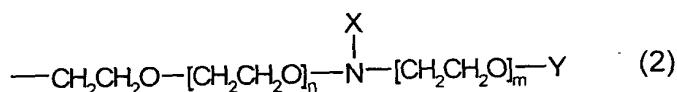
WHAT IS CLAIMED IS:

1. A mixture of sulfuric esters of formula (1)



wherein

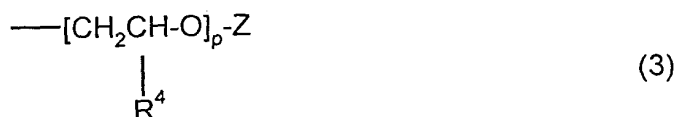
- 5  $\text{R}^1$  is an aliphatic radical having 1 to 30 carbon atoms,  
 $\text{R}^2$  is a radical of formula (2)



wherein

- 10  $n$  is an integer from 0 to 30,  
 $m$  is an integer from 1 to 29,  
 $X$  is an aliphatic radical having 4 to 24 carbon atoms, and  
 $Y$  is H or  $\text{SO}_2(\text{OM})$ , where M represents hydrogen, alkali metal, ammonium, mono-, di-, tri-, or tetra( $\text{C}_1\text{-C}_6\text{-alkyl}$ )ammonium, or mono-, di-, tri-, or tetra( $\text{C}_2\text{-C}_6\text{-alkanol}$ )ammonium ions,

- 15  $\text{R}^3$  is a radical of formula (3)



wherein

- 20  $p$  is an integer from 4 to 35,  
 $\text{R}^4$  is H, methyl, ethyl, phenyl, or mixtures of H and methyl, and  
 $Z$  is H, methyl, ethyl, or  $\text{SO}_2(\text{OM})$ , where M represents hydrogen, alkali metal, ammonium, mono-, di-, tri-, or tetra( $\text{C}_1\text{-C}_6\text{-alkyl}$ )ammonium, or mono-, di-, tri-, or tetra( $\text{C}_2\text{-C}_6\text{-alkanol}$ )ammonium ions, and

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a, b, and c are identical or different and are 0, 1, or 2, with the proviso that  
a+b+c is 2,

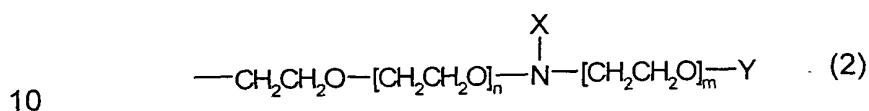
obtained by reacting sulfonyl chloride with a mixture of the alcohols R<sup>1</sup>OH,  
R<sup>2</sup>OH, and R<sup>3</sup>OH, wherein R<sup>1</sup>, R<sup>2</sup>, and R<sup>3</sup> have the same meanings as for

5 formula (1) except that Y is exclusively hydrogen and Z is hydrogen,  
methyl, or ethyl.

2. A mixture of sulfuric esters according to Claim 1 wherein

R<sup>1</sup> is an aliphatic radical having 4 to 30 carbon atoms,

R<sup>2</sup> is a radical of formula (2)



wherein

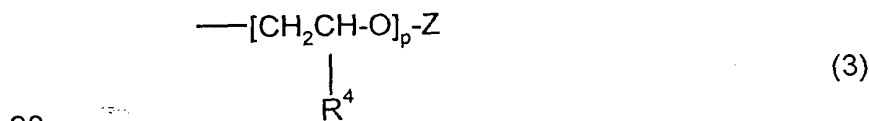
n is an integer from 0 to 10,

m is an integer from 1 to 10,

X is an aliphatic radical having 12 to 24 carbon atoms, and

15 Y is H or SO<sub>2</sub>(OM), where M independently represents  
hydrogen, alkali metal, ammonium, mono-, di-, tri-, or tetra-  
(C<sub>1</sub>-C<sub>6</sub>-alkyl)ammonium, or mono-, di-, tri-, or tetra(C<sub>2</sub>-C<sub>6</sub>-  
alkanol)ammonium ions,

R<sup>3</sup> is a radical of formula (3)



wherein

p is an integer from 3 to 35,

R<sup>4</sup> is H or methyl, and

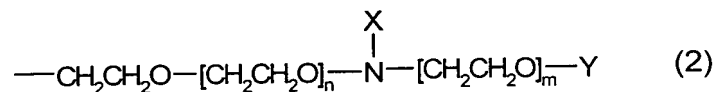
25 Z is H, methyl, ethyl, or SO<sub>2</sub>(OM), where M independently  
represents hydrogen, alkali metal, ammonium, mono-, di-,  
tri-, or tetra(C<sub>1</sub>-C<sub>6</sub>-alkyl)ammonium, or mono-, di-, tri-, or  
tetra(C<sub>2</sub>-C<sub>6</sub>-alkanol)ammonium ions, and

a, b, and c are identical or different and are 0, 1, or 2, with the proviso that  $a+b+c$  is 2.

3. A mixture of sulfuric esters according to Claim 1 wherein

$R^1$  is an aliphatic radical having 8 to 20 carbon atoms,

5  $R^2$  is a radical of formula (2)



wherein

n is an integer from 0 to 5,

m is an integer from 1 to 5,

10 X is an aliphatic radical having 16 to 22 carbon atoms, and

Y is H,

$R^3$  is a radical of formula (3)



wherein

15 p is an integer from 9 to 22,

$R^1$  is H, and

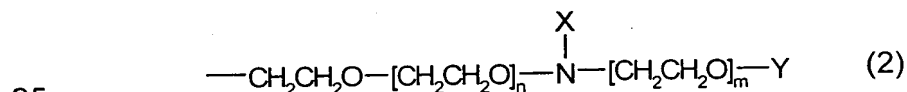
Z is H, and

a, b, and c are identical or different and are 0, 1, or 2 with the proviso that  $a+b+c$  is 2.

20 4. A process for preparing a mixture of sulfuric esters according to Claim 1 comprising reacting sulfuryl chloride with a mixture of the alcohols  $R^1\text{OH}$ ,  $R^2\text{OH}$ , and  $R^3\text{OH}$ , wherein

$R^1$  is an aliphatic radical having 1 to 30 carbon atoms,

$R^2$  is a radical of formula (2)



wherein

n is an integer from 0 to 30,

m is an integer from 1 to 29,

X is an aliphatic radical having 4 to 24 carbon atoms, and

Y is H, and

5 R<sup>3</sup> is a radical of formula (3)



wherein

p is an integer from 4 to 35,

R<sup>4</sup> is H, methyl, ethyl, phenyl, or mixtures of H and methyl, and

10 Z is H, methyl, or ethyl.

5. A process according to Claim 4 wherein 3 mol of the mixture of the alcohols R<sup>1</sup>OH, R<sup>2</sup>OH, and R<sup>3</sup>OH are reacted with 1.5 to 2.5 mol of sulfuryl chloride.

6. A process according to Claim 4 wherein the alcohols R<sup>1</sup>OH, R<sup>2</sup>OH, and R<sup>3</sup>OH are used in the quantity ratios

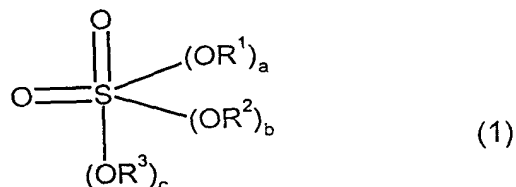
R<sup>1</sup>OH 10 to 40 mol%

R<sup>2</sup>OH 20 to 80 mol%, and

R<sup>3</sup>OH 10 to 40 mol%,

the amounts of the three alcohols totaling 100 mol%.

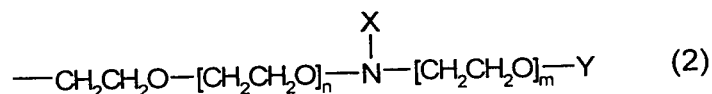
20 7. A sulfuric ester of formula (1)



wherein

R<sup>1</sup> is an aliphatic radical having 1 to 30 carbon atoms,

R<sup>2</sup> is a radical of formula (2)



wherein

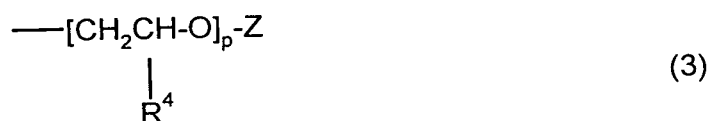
n is an integer from 0 to 30,

m is an integer from 1 to 29,

5 X is an aliphatic radical having 4 to 24 carbon atoms, and

Y is H or SO<sub>2</sub>(OM), where M represents hydrogen, alkali metal, ammonium, mono-, di-, tri-, or tetra(C<sub>1</sub>-C<sub>6</sub>-alkyl)ammonium, or mono-, di-, tri-, or tetra(C<sub>2</sub>-C<sub>6</sub>-alkanol)ammonium ions,

R<sup>3</sup> is a radical of formula (3)



wherein

p is an integer from 4 to 35,

R<sup>4</sup> is H, methyl, ethyl, phenyl, or mixtures of H and methyl, and

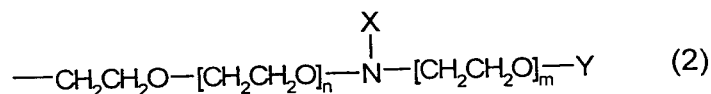
15 Z is H, methyl, ethyl, or SO<sub>2</sub>(OM), where M represents hydrogen, alkali metal, ammonium, mono-, di-, tri-, or tetra-(C<sub>1</sub>-C<sub>6</sub>-alkyl)ammonium, or mono-, di-, tri-, or tetra(C<sub>2</sub>-C<sub>6</sub>-alkanol)ammonium ions, and

a, b, and c are identical or different and are 0 or 1, with the proviso that a+b+c is 2.

20 8. A sulfuric ester according to Claim 7 wherein

R<sup>1</sup> is an aliphatic radical having 4 to 30 carbon atoms,

R<sup>2</sup> is a radical of formula (2)



wherein

25 n is an integer from 0 to 10,

m is an integer from 1 to 10,

X is an aliphatic radical having 12 to 24 carbon atoms, and  
 Y is H or SO<sub>2</sub>(OM), where M independently represents  
 hydrogen, alkali metal, ammonium, mono-, di-, tri-, or  
 tetra(C<sub>1</sub>-C<sub>6</sub>-alkyl)ammonium, or mono-, di-, tri-, or tetra(C<sub>2</sub>-C<sub>6</sub>-  
 5 alkanol)ammonium ions,

R<sup>3</sup> is a radical of formula (3)



wherein

p is an integer from 3 to 35,

10 R<sup>4</sup> is H or methyl, and

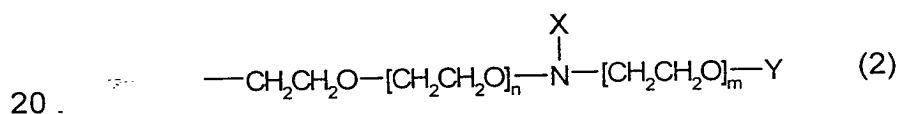
Z is H, methyl, ethyl, or SO<sub>2</sub>(OM), where M independently  
 represents hydrogen, alkali metal, ammonium, mono-, di-,  
 tri-, or tetra(C<sub>1</sub>-C<sub>6</sub>-alkyl)ammonium, or mono-, di-, tri-, or  
 tetra(C<sub>2</sub>-C<sub>6</sub>-alkanol)ammonium ions, and

15 a, b, and c are identical or different and are 0 or 1, with the proviso  
 that a+b+c is 2.

9. A sulfuric ester according to Claim 7 wherein

R<sup>1</sup> is an aliphatic radical having 8 to 20 carbon atoms,

R<sup>2</sup> is a radical of formula (2)



20

wherein

n is an integer from 0 to 5,

m is an integer from 1 to 5,

X is an aliphatic radical having 16 to 22 carbon atoms, and

25 Y is H,

R<sup>3</sup> is a radical of formula (3)



wherein

p is an integer from 9 to 22,

R<sup>1</sup> is H, and

5 Z is H, and

a, b, and c are identical or different and are 0 or 1, with the proviso that a+b+c is 2.

10 10. An organic or aqueous-organic formulation comprising 25 to 70% by weight of a mixture of sulfuric esters according to Claim 1.

10 11. An organic or aqueous-organic formulation according to Claim 10 wherein the organic component of the formulation comprises one or more organic solvents selected from the group consisting of mono-, di-, and oligoethylene glycols, oligopropylene glycols, and oligoethylene/propylene glycols, and mono- and diethers thereof.

15 12. An organic or aqueous-organic formulation comprising 25 to 70% by weight of a mixture of sulfuric esters according to Claim 7.

20 13. An organic or aqueous-organic formulation according to Claim 12 wherein the organic component of the formulation comprises one or more organic solvents selected from the group consisting of mono-, di-, and oligoethylene glycols, oligopropylene glycols, and oligoethylene/propylene glycols, and mono- and diethers thereof.

14. A method comprising dyeing nitrogenous fiber materials in the presence of an auxiliary wherein the auxiliary is a sulfuric ester according to Claim 1.

25 15. A method according to Claim 14 wherein the dyeing is carried out with an acid dye, a 1:1 metal complex dye, a 1:2 metal complex dye, a chromium dye, or mixtures thereof.

16. A method comprising dyeing nitrogenous fiber materials in the presence of an auxiliary wherein the auxiliary is a sulfuric ester according to Claim 7.

5 17. A method according to Claim 16 wherein the dyeing is carried out with an acid dye, a 1:1 metal complex dye, a 1:2 metal complex dye, a chromium dye, or mixtures thereof.

18. A method comprising dyeing nitrogenous fiber materials in the presence of an auxiliary wherein the auxiliary is a formulation according to Claim 10.

10 19. A method according to Claim 18 wherein the dyeing is carried out with an acid dye, a 1:1 metal complex dye, a 1:2 metal complex dye, a chromium dye, or mixtures thereof.

15 20. A method comprising dyeing nitrogenous fiber materials in the presence of an auxiliary wherein the auxiliary is a formulation according to Claim 12.

21. A method according to Claim 20 wherein the dyeing is carried out with an acid dye, a 1:1 metal complex dye, a 1:2 metal complex dye, a chromium dye, or mixtures thereof.